



Leica provides precise GPS Station to monitor world's longest suspension bridge in Japan

A network of precise GPS reference stations, supplied by Leica Geosystems, has been installed on the world's longest suspension bridge in Japan to monitor movements of the bridge's structure in real-time, with millimetre-level accuracy.

The monitoring system consists of three Leica MC1000 DGPS receivers, connected through a network of fibre optic cables. Two of the units are mounted atop the tall towers at either end, and the third is at the midpoint of the bridge. This enables engineers to determine the precise extent of the bridge's movements, including critical excursions outside the structure's design specifications. The Akashi Strait is 110 m deep and has rapid currents that reach a speed of up to 4-5 m/sec. Navigation is extremely difficult and there have been many shipping accidents in the straits in the past. The region is also at risk from high winds and earthquakes.

Real time 3-D millimetre-level accuracy

The Leica MC1000 is a 12-channel L1/L2 GPS receiver that uses real-time kinematic (RTK) processing with on-the-fly (OTF) ambiguity resolution to achieve millimetre-level accuracy in three dimensions. The MC1000 provides full-wave-length phase and P-code tracking, even under anti-spoofing (AS) conditions. Installation of the GPS receivers on the Akashi bridge was performed by Akasaka Tec, Leica's licensed representative in Japan.